

What is claimed is:

1. A silent chain power transmission apparatus comprising:

5 an endless silent chain comprised of a multiplicity of link plates interleaved by a multiplicity of connecting pins, each of said link plates having a pair of V-shaped teeth and a pair of pinholes for fitting said connecting pins, each of said V-shaped link teeth having opposed inside tooth faces defining  
10 insides thereof and outside tooth faces defining outsides thereof; and

a sprocket having a plurality of teeth for intermeshing with said V-shaped teeth of said link plates,

said inside tooth faces having profiles identical to  
15 tooth profiles arranged axially of a hob cutter for forming said teeth of said sprocket,

said inside and outside tooth faces being positioned to satisfy the expression  $H_i = H_o + H_s$ ,  
where  $H_i$  is a distance from a pin center line, passing over the  
20 centers of said connecting pins, to a pitch line of said inside tooth faces,  $H_o$  is a distance from said pin center line to a pitch line of said outside tooth faces, and  $H_s$  is an amplitude of polygonal motion of said chain,

each of said link plates having a concave bottom surface  
25 continuing from and defined between said opposed inside tooth faces at a position where interference of said concave bottom surface with corresponding tooth edges of said sprocket teeth,

which arises owing to said chain polygonal motion amplitude when said outside tooth faces of said link plate are brought into meshing contact with said sprocket teeth and get seated thereon, can be avoided.

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2. A silent chain power transmission apparatus according to claim 1, wherein said V-shaped teeth have tooth edges profiled at a position where interference of said tooth edges with root bottoms defined between opposed ones of said teeth of  
10 said sprocket, which arises owing to said chain polygonal motion amplitude when said outside tooth faces of said link plate are brought into meshing contact with said opposed ones of said sprocket teeth and get seated thereon, can be avoided.

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3. A silent chain power transmission apparatus according to claim 1, wherein the concave bottom surface of the link plate has an arcuate profile.